

CMUT5087E PNP
CMUT5088E NPN

ENHANCED SPECIFICATION
SURFACE MOUNT ULTRAMini™
COMPLEMENTARY
SILICON TRANSISTORS

ENHANCED
SPECIFICATION

ULTRAMini™



SOT-523 CASE

Central™
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMUT5087E, and CMUT5088E, are Silicon transistors in an ULTRAMini™ surface mount package with enhanced specifications designed for applications requiring high gain and low noise.

MARKING CODES:

CMUT5087E PNP MARKING CODE: U87

CMUT5088E NPN MARKING CODE: U88

MAXIMUM RATINGS: (T_A=25°C)

- ◆ Collector-Base Voltage
- ◆ Collector-Emitter Voltage
- ◆ Emitter-Base Voltage
- Collector Current
- Power Dissipation
- Operating and Storage
- Junction Temperature
- Thermal Resistance

SYMBOL

V _{CBO}	50
V _{CEO}	50
V _{EBO}	5.0
I _C	100
P _D	350
T _J , T _{stg}	-65 to +150
Θ _{JA}	357

UNITS

V
V
V
mA
mW
°C
°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

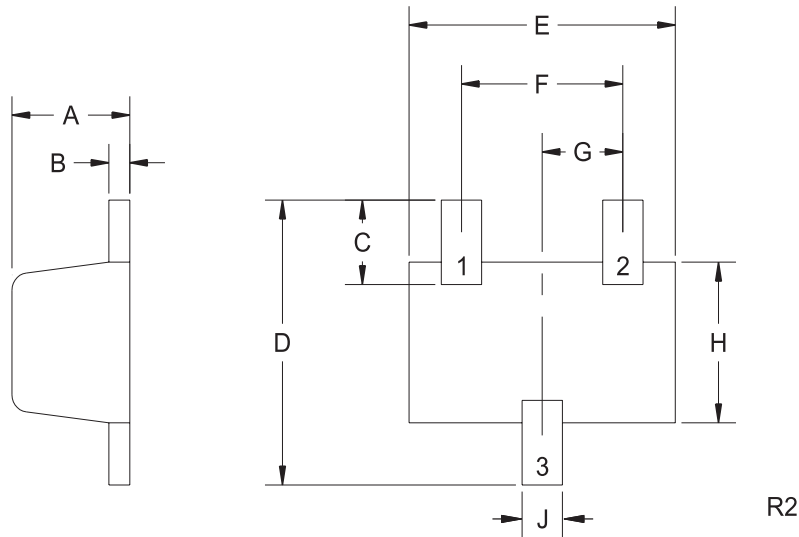
SYMBOL	TEST CONDITIONS	TYP			MAX	UNITS
		MIN	NPN	PNP		
I _{CBO}	V _{CB} =20V				50	nA
I _{EBO}	V _{EB} =3.0V				50	nA
◆ BV _{CBO}	I _C =100μA	50	135	150		V
◆ BV _{CEO}	I _C =1.0mA	50	65	105		V
◆ BV _{EBO}	I _E =100μA	5.0	8.7	7.5		V
◆ V _{CE(SAT)}	I _C =10mA, I _B =1.0mA		45	50	100	mV
◆ V _{CE(SAT)}	I _C =100mA, I _B =10mA		110	225	400	mV
V _{BE(SAT)}	I _C =10mA, I _B =1.0mA		700	700	800	mV
◆ h _{FE}	V _{CE} =5.0V, I _C =0.1mA	300	430	390	900	
h _{FE}	V _{CE} =5.0V, I _C =1.0mA	300	435	380		
◆ h _{FE}	V _{CE} =5.0V, I _C =10mA	300	430	350		
◆ h _{FE}	V _{CE} =5.0V, I _C =100mA	50	125	75		
◆ f _T	V _{CE} =5.0V, I _C =500μA, f=20MHz	100				MHz
C _{ob}	V _{CB} =5.0V, I _E =0, f=1.0MHz				4.0	pF
C _{ib}	V _{BE} =0.5V, I _C =0, f=1.0MHz				15	pF
h _{fe}	V _{CE} =5.0V, I _C =1.0mA, f=1.0kHz	350			1400	
NF	V _{CE} =5.0V, I _C =100μA, R _S =10kΩ f=10Hz to 15.7kHz				3.0	dB

- ◆ Enhanced specification.
- ◆◆ Additional Enhanced specification.

R1 (12-February 2003)

SOT-523 CASE - MECHANICAL OUTLINE

BOTTOM VIEW



LEAD CODE:

- 1) BASE
- 2) EMITTER
- 3) COLLECTOR

MARKING CODES:

CMUT5087E: U87

CMUT5088E: U88

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.023	0.031	0.58	0.78
B	0.002	0.008	0.04	0.20
C	0.013	0.021	0.34	0.54
D	0.059	0.067	1.50	1.70
E	0.059	0.067	1.50	1.70
F	0.035	0.043	0.90	1.10
G	0.020		0.50	
H	0.031	0.039	0.78	0.98
J	0.010	0.014	0.25	0.35

SOT-523 (REV: R2)